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| Notice of Allowability | Application No. | Applicant(s) | |
| | 09/811,449 | OKAMOTO, YUTAKA | |
| | Examiner | Art Unit | |
| | Christopher O. Onuaku | 2616 | |

-- **The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to _____.
2. The allowed claim(s) is/are 1-14.
3. The drawings filed on 3/20/01 are accepted by the Examiner.
4. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some* c) None of the:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No./Mail Date _____.
 - (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. Notice of References Cited (PTO-892)
2. Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 3/20/01
4. Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. Notice of Informal Patent Application (PTO-152)
6. Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. Examiner's Amendment/Comment
8. Examiner's Statement of Reasons for Allowance
9. Other _____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-14 are allowable over the prior art of record.
2. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 1, the invention relates to an improvement of a digital data play back apparatus and a method for playing back digital data which is optically, magnetically or opto-magnetically recorded on a recording medium such as a disc or the like.

The closest references Kaneko (US 4,393,413) teaches velocity error compensation that is adapted for use in a time base corrector, including improved velocity error compensator which functions to more accurately compensate for actual velocity errors that may be present in the information signals which are applied to the time base corrector, and Dolivo et al (US 4,890,299) teach timing acquisition in receivers of data transmission or recording systems, including timing acquisition in receivers of such systems which use partial-response signaling.

However, Kaneko and Dolivo fail to explicitly disclose a digital data play back apparatus, where the play back apparatus comprises equalizing means for equalizing digital data output from conversion means into a waveform which agrees with a partial response class on the basis of a clock output from a variable frequency oscillation

means, timing phase gradient detection means for detecting a timing phase gradient between a signal waveform output from the equalization means and a clock output from the variable frequency oscillation means, and control means for controlling oscillation frequency of the variable frequency oscillation means on the basis of the timing phase gradient detected with the timing phase gradient detection means.

Regarding claim 8, the invention relates to an improvement of a digital data play back apparatus and a method for playing back digital data which is optically, magnetically or opto-magnetically recorded on a recording medium such as a disc or the like.

The closest references Kaneko (US 4,393,413) teaches velocity error compensation that is adapted for use in a time base corrector, including improved velocity error compensator which functions to more accurately compensate for actual velocity errors that may be present in the information signals which are applied to the time base corrector, and Dolivo et al (US 4,890,299) teach timing acquisition in receivers of data transmission or recording systems, including timing acquisition in receivers of such systems which use partial-response signaling.

However, Kaneko and Dolivo fail to explicitly disclose a method for playing back digital data, where the method comprises the steps of equalizing digital data output from conversion step into a waveform which agrees with a partial response class on the basis of a clock output from a variable frequency oscillation means, detecting a timing phase gradient between a signal waveform output from the equalization step and a

clock output from the variable frequency oscillation means, and controlling the oscillation frequency of the variable frequency oscillation means on the basis of the timing phase gradient detected with the timing phase gradient detection step.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kimmitt (US 6,738,935) discloses data encoding, including physical coding and decoding techniques for segregating and reliably communicating data over a plurality of serial channels.

Kim (US 6,335,949) teaches a non-linear signal receiver for stably restoring the sampling time of a signal reproduced from a data storage device, taking in consideration non-linear distortion of the signal.

Dolivo et al (US 4,644,564) teach the decoding of a binary symbol sequence which appears at the output of a channel in modified form.

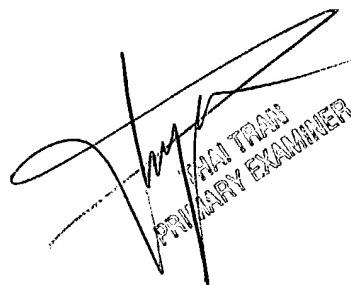
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher O. Onuaku whose telephone number is (703) 308-7555. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B. Christensen can be reached on 703-308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

[Signature]
COO

11/27/04



VAN TRAN
PRIMARY EXAMINER